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Michael L. Van De Vanter

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EXAMINER

INGBERG, TODD D

ART UNIT

PAPER NUMBER

2124

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/940,242

Applicant(s)

VAN DE VANTER ET AL.

Examiner

Todd Ingberg

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claims 1 – 30 have been examined.

Claim 29 was amended

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:
2. Amendment to Claim 29 has overcome the rejected under 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 – 24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The Examiner has provided one way to overcome the rejection below.

Claim 1

An interactive software engineering tool **executing on a computer and stored on a computer readable medium** that, for distinct portions of a single unit of source code thereof with behavior according to a corresponding set of lexical rules, wherein transition of the behavior from that in accordance with a first lexical context (the portion as displayed) to that in accordance with a second lexical context is based on recognition of an opening boundary token (the period is an open boundary token) according to the first lexical context and without use of a structural command to the interactive software engineering tool.

Claim 7

An interactive software engineering tool **executing on a computer and stored on a computer readable medium** that, in response to introduction of a language-defined opening boundary token at a cursor position in an edit buffer, automatically inserts a corresponding closing boundary token, such that display of edit buffer content past the cursor position maintains its pre-

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introduction association with a first lexical context and with linguistically-driven typography therefor, while subsequent entry at the cursor position is subject to a second lexical context. As per claim 1 the edit buffer being the contents of the buffer containing the method.

Claim 12

A method of operating an interactive software engineering tool **executing on a computer and stored on a computer readable medium**, the method comprising: rendering a display presentation corresponding to a unit of source code, said display presentation corresponding to at least a first lexical context operative at an insertion point; recognizing interactive entry of an opening boundary token at the insertion point; and in response to said recognition of said opening boundary token, creating a second lexical context operative for subsequent interactive entry at the insertion point, wherein the second lexical context is delimited by said opening boundary token ;and a position in the source code immediately following the insertion point, wherein said opening boundary token is a valid lexical token in accordance with one of the first and the second lexical context and not a nonlexical, structural command to the interactive software engineering tool.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 – 15, 19, 21 - 30 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 6,311,323 **Shulman et al.**

Examiner's Note: Applicant has taken a low level formal approach to claiming the grammar of their invention. The rejection will focus on the functionality which is supported by the claimed invention and anticipated by the Shulman reference.

The rejection is maintained and argued below in the Response To Arguments section.

Claim 1

Shulman anticipates an interactive software engineering tool(**Shulman**, Abstract, real time tool) that, for distinct portions of a single unit of source code(**Shulman**, figure 4, mytext.f) thereof with behavior according to a corresponding set of lexical rules(**Shulman**, lexical rules for matching portions of an object to object grammar), wherein transition of the behavior from that

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in accordance with a first lexical context (the portion as displayed) to that in accordance with a second lexical context (the response in the select window provides the object selections which complete the object grammar) is based on recognition of an opening boundary token (the period is an open boundary token) according to the first lexical context and without use of a structural command to the interactive software engineering tool (The select box appeared via an interpreter based on the open boundary token and partial grammar).

Claim 2

An interactive software engineering tool as recited in claim 1, wherein the behavior includes linguistically-driven typography. (The example depicted in Figure 4 as described in claim 1 is linguistically driven – The rejection as per claim 1).

Claim 3

An interactive software engineering tool as recited in claim 1, wherein the behavior includes lexical analysis of text based on a then operative one of the first and the second lexical contexts. The rejection as per claim 1

Claim 4

An interactive software engineering tool as recited in claim 1, wherein the distinct portions are delimited by the opening boundary token and a corresponding, automatically-added closing boundary token. The rejection as per claim 1 – the selection of the method from the select box closes the boundary token.

Claim 5

An interactive software engineering tool as recited in claim 1, wherein the first and second lexical contexts respectively correspond to one of: a source language lexical context and a textual comment lexical context; a source language lexical context and a string literal lexical context; a **source language lexical context** and a character lexical context; and first and second source language lexical contexts. The rejection as per claim 1

Claim 6

An interactive software engineering tool as recited in claim 1, wherein the single unit of source code is one of a line, statement or phrase; a function, procedure or **method**; and a markup language element, thereof. The rejection as per claim 1

Claim 7

An interactive software engineering tool that, in response to introduction of a language-defined opening boundary token at a cursor position in an edit buffer, automatically inserts a corresponding closing boundary token, such that display of edit buffer content past the cursor position maintains its pre-introduction association with a first lexical context and with linguistically-driven typography therefor, while subsequent entry at the cursor position is subject to a second lexical context. As per claim 1 the edit buffer being the contents of the buffer containing the method.

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Claim 8

An interactive software engineering tool as recited in claim 7, wherein display of symbols entered into the second lexical context is in accordance with linguistically-driven typography distinct from that employed in the first lexical context. As per claim 2.

Claim 9

An interactive software engineering tool as recited in claim 7, wherein lexical analysis of symbols entered into the second lexical context is in accordance with lexical rules distinct from that employed for the first lexical context. As per claim 1.

Claim 10

An interactive software engineering tool as recited in claim 7, wherein the second lexical context is delimited by the opening and closing boundary tokens. As per claim 1.

Claim 11

An interactive software engineering tool as recited in claim 7, wherein the first and second lexical contexts respectively correspond to one of source language lexical context and a textual comment lexical context; a source language lexical context and a string literal lexical context; a source language lexical context and a character lexical context; and first and second source language lexical contexts. As per claim 1.

Claim 12

Shulman anticipates a method of operating an interactive software engineering tool, the method comprising: rendering a display presentation corresponding to a unit of source code, said display presentation corresponding to at least a first lexical context operative at an insertion point; recognizing interactive entry of an opening boundary token at the insertion point; and in response to said recognition of said opening boundary token, creating a second lexical context operative for subsequent interactive entry at the insertion point, wherein the second lexical context is delimited by said opening boundary token ;and a position in the source code immediately following the insertion point, wherein said opening boundary token is a valid lexical token in accordance with one of the first and the second lexical context and not a nonlexical, structural command to the interactive software engineering tool. The rejection as per claim 1

Claim 13

A method as recited in claim 12, further comprising: in response to said recognition of said opening boundary token, automatically inserting at said position in the source code immediately following the insertion point, a closing boundary token. The rejection as per claim 1

Claim 14

A method as recited in claim 12, wherein stylistic rules applied to rendering of symbols within the second lexical context differ from those applied to rendering of symbols within the first lexical context. The rejection as per claim 1

Claim 15

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A method as recited in claim 12, wherein lexical rules applied to recognition of tokens within the second lexical context differ from those applied to recognition of tokens within the first lexical context. The rejection as per claim 1

Claim 19

A method as recited in claim 12, wherein the first and second lexical contexts correspond to respective programming language lexical contexts. The rejection as per claim 1

Claim 21

A method as recited in claim 12, wherein transitions between the first and second lexical contexts are performed in response to navigation events and in response to entry of valid lexical tokens such that the transitions are transparent to a user of the interactive software engineering tool. The rejection as per claim 1

Claim 22

A method as recited in claim 12, wherein transitions between the first and second lexical contexts are performed in response to navigation events and in response to entry of valid lexical tokens such that a user of the interactive software engineering tool need not employ structural commands therefor. The rejection as per claim 1

Claim 23

A method as recited in claim 12, wherein the interactive software engineering tool includes one or more of **an editor**; (Shulman, real time tool is showing an editor) a source-level debugger; and a source analyzer.

Claim 24

A method as recited in claim 12, wherein said unit of source code includes one or more of: a line; **a statement**; a markup language element; and a function or procedure. The rejection as per claim 1

Claim 25

A computer program product, encoded in at least one computer readable medium and comprising: functionally-descriptive encodings of at least first and second language contexts; and instructions at least partially implementing a source, code editor that invokes the second language context nested within the first language context based solely on recognition of a boundary token defined by the first language context and entered at the cursor position, while maintaining pre-existing language context past the cursor position. The rejection as per claim 1

Claim 26

The computer program product of claim 25, embodied as one or more of: **an editor**; a source-level debugger; and a source analyzer. As per claim 23.

Claim 27

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The computer program product of claim 25, embodied, at least in part, as a language specialization component for integration with a software engineering tool. The rejection as per claim 1

Claim 28

The computer program product of claim 25, supplied, at least in part, via a communications medium for execution on a computer coupled thereto. The rejection as per claim 1 - monitor

Claim 29

The computer program product of claim 25, wherein the at least one computer readable medium includes at least one of magnetic storage medium, optical storage medium, electronic storage medium, a network medium, wireline medium, wireless medium or other communications medium. As per claim 28.

Claim 30

A computer system comprising: a display; memory; a language-based editor program executable thereby; and a buffer defined by the source code editor program and instantiable in the memory, wherein the language-based editor program renders contents of the buffer to the display in accordance with an associated language context, and wherein the language-based editor program recognizes entry of a transitional opening token defined by a first language context and, in response thereto, associates text subsequently entered into the buffer at an insertion point thereof with a second language context, while maintaining a pre-existing association between the first language context and contents of the buffer past the insertion point. As per claim 1 the buffer being the storage area in memory of the selection of the selected method.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 16 – 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shulman in view of the design choice of programming an opening boundary token. The programming of a character to be matched is well within the ordinary skill of an ordinary artisan prior to the time of invention. Therefore it would have been obvious to select a double quote OR

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single quote OR double slash OR slash and two asterisks, because the system needs a identifier to invoke the embedding feature.

For claims 16 – 18 the choice of what character to use is a design choice. Even the Specification expressly states the list is not limited to those specific.

Claim 16

A method as recited in claim 12, wherein the first lexical context is a programming language lexical context; wherein the second lexical context is string literal lexical context; and wherein the opening boundary token is a quote (") character.

Claim 17

A method as recited in claim 12, wherein the first lexical context is a programming language lexical context; wherein the second lexical context is character lexical context; and wherein the opening boundary token is a single quote (') character.

Claim 18

A method as recited in claim 12, wherein the first lexical context is a programming language lexical context; wherein the second lexical context is textual comment lexical context; and wherein the opening boundary token is one of: a multiple line comment token (/*); a single line comment token (//); and a document type comment token (/**).

8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shulman in view of SGML as taught by Shafer USPN 5,583,762.

Shulman teaches the embedded lexical content features but does not explicitly mention the use in a markup language. It is Shafer who mentions the use of markup languages (**Shafer**, Abstract). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Shulman and Shafer because the markup languages like other programming languages contain known constructs that can benefit from tools like Shulman that make the statements syntax correct.

Claim 20

A method as recited in claim 12, wherein at least one of the first and second lexical contexts is a markup language lexical context.

Response to Arguments

9. Applicant's arguments filed September 3, 2004 have been fully considered but they are not persuasive. The arguments are scanned in below. Some OCR errors may be present.

Applicant's Statement

"Rejection under 35 U. S.C. 102(b).

Claims 1 - 15, 19, and 21 - 30 stand rejected under 35 U.S.C. .§1 02(h) as being anticipated by U.S. Patent No. 6,311,323, naming Shulman et al. as inventors (hereinafter Shulman). Applicant respectfully traverses all of these rejections.

Shulman at least fails to disclose or suggest different lexical contexts and, any transition, much less a transition from behavior in accordance with a first lexical context to behavior in accordance with a second lexical context. The Office Action simply refers to its rejection of claim 1 to support rejection of claims 2 - 15, 19, and 21 - 30. The Office Action does not address the particular, limitations claims other than claim 1."

Argument's For Claim 1

"Assist Window is not a Lexical Context

In rejecting claim 1, the Office Action relies upon Shulman Abstract and Figure 4. Shulman Abstract and Figure 4 cannot support a rejection of Applicant's claims, nor can any other section of Shulman. Shulman discloses automatically displaying an assist window (i.e., a pop-up window), which displays two general categories of information (Abstract), and Figure 4 illustrates a pop-up window displaying selections for completing a member name. The pop-up window is not a lexical context. The pop-up window does not affect behavior its accordance with a set of lexical. The pop-up window provides a user with a selection of choices "to complete an immediate section of a programming language statement" (col. 7, lines 30 - 33). "Choosing from the finite list of menu items also saves the programmer from having to manually enter each keystroke of with immediate section of a programming language statement and minimizes the chances that the programmer might inadvertently enter a typographical error into a programming language statement" (col. 7, lines 34 - 39). Again, the assist window of Shulman is not a lexical context."

Examiner's Response

The reference clearly shows context sensitive help in completing a line of source code. Applicant is characterizing the context sensitive help as a pop-up window. The prior art suggests based on the lexical content of the line of code. The example in the figures relate to an object oriented programming language where the lexical content determines the object/method/attribute to suggest line completion. Cursor position is critical. The lexical context is essential in determining the content to display. Applicant's argument does not seem to take the reference as a whole and the intended teaching of the Shulman reference.

Applicant's Argument Continued

"Activation of Pop-up Window is not Transition of Behavior in accordance with a First Lexical Context to Behavior in accordance with a Second Lexical Context

The activation of the assist window in Shulman does not transition behavior from being in accordance with a first lexical context to being in accordance with a second lexical context. In fact, in addition to the assist window not being a lexical context, the assist window is "non-intrusive to programmer input and can be ignored by the programmer" (Abstract). Applicant does not assert that the transition in behavior as recited in the claims is intrusive, but that the assist window disclosed by Shulman essentially has no effect without user interaction, thus there is not transition in behavior in Shulman."

Examiner's Response

The argument that the user must interact is the best argument, but is not clearly and concisely present in the claim limitations. The user is entering a line of source code and the assistance is based on what is entered and the user can accept it or ignore it.

Applicant's Argument Continued

"Although not addressed by the Office Action, Applicant indicates at least some of the additional subject matter in the independent claims not disclosed or suggested by Shulman or any other art of record:"

Examiner's Response

Argument too nebulous to know what Applicant believes is missing.

Argument for Claim 7

"Claim 7:

An interactive software engineering tool that, in response to introduction of a language-defined opening boundary token at a cursor position in an edit buffer, automatically inserts a corresponding closing boundary token, such that display of edit buffer content past the cursor position maintains its pre-introduction association with a first lexical context and with linguistically-driven typography therefor, while subsequent entry at the cursor position is subject to a second lexical context."

Examiner's Response

The argument is not without merit. The line of source code does in fact contain closing boundary tokens if you consider the syntax of the line of code in figure on the front of the patent. The user to accept the suggested line of code based on the cursor position must press the tab key. It is not clear based on the argument how the claimed invention distinguishes itself from the prior art. With the possible exception of not requiring the user to interact with the invention.

Argument for Claim 12

"Claim 12:

A method of operating an interactive software engineering tool, the method comprising:

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rendering a display presentation corresponding to a unit of source code, said display presentation corresponding to at least a first lexical context operative at an insertion point; recognizing interactive entry of an opening boundary token at the insertion point; and in response to said recognition of said opening boundary token, creating a second lexical context operative for subsequent interactive entry at the insertion point, wherein the second lexical context is delimited by said opening boundary token and a position in the source code immediately following the insertion point, wherein said opening boundary token is a valid lexical token in accordance with one of the first and the second lexical context and not a non-lexical, structural command to the interactive software engineering tool.”

Examiner’s Response

Merely repeating the claim limitations does not enable the Examiner to understand how the claimed invention distinguishes itself from the prior art. The prior art based on the input provided context sensitive help in completing a line of code. The insertion point is based on the cursor position and is optional. The user can ignore it. The lexical context is based on object oriented programming language context as mentioned above.

Argument for Claim 25

“Claim 25: A computer program product encoded in at least one computer readable medium and comprising: functionally-descriptive encodings of at least first and second language contexts; and, instructions at least partially implementing a source code editor that invokes the second language context nested within the first language context based solely on recognition, of a boundary token defined by the first language context and entered at the cursor position, while maintaining pre existing language context past the cursor position.”

Examiner’s Response

Examiner believes the response above may cover the point Applicant might have been making.

Argument for Claim 30

“Claim 30: A computer system comprising: a display; memory; a language-based editor program executable thereby; and a buffer defined by the source code editor program and instantiable in the memory, wherein the language-based editor- program renders contents of the buffer to the display in accordance with an associated language context, and wherein the language.-based editor program recognizes entry of a transitional opening token defined by a first language context and, in response thereto, associates text subsequently entered into the buffer at an insertion point thereof with a second language context, while maintaining a pre-existing association between the first language context and contents of the buffer past the insertion point.”

Examiner’s Response

Examiner believes the response above may cover the point Applicant might have been making.

Argument for Claim 12

“For at least the reasons given above, Applicant respectfully submits that claims 1 - 15, and 21 -30 are allowable and that none of the claims are anticipated by Shulman, or any other art or record.”

Examiner’s Response

Currently we are not in agreement.

Argument for Claim 12

“Rejections under 35 U.S. C. § 103(a)

Claims 16 - 18 stand rejected under 35 U.S.C. §§103(a) as being obvious in view of Shulman. Claim 20 stands rejected under 35 U.S.C. §103(a) as being obvious in view of Shulman and further in view of U.S. Patent No- 5,583,762, naming Shafer as an inventor. Applicant respectfully traverses all of these rejections. Applicant submits that at least for the reasons given above, claims 16 - 18 and 20 are not obvious in view of Shulman, at least because Shulman does not anticipate their corresponding base independent claim 12.”

Examiner’s Response

Examiner disagrees.

Argument for Claim 12

“For at least the reasons given above, Applicant respectfully submits that claims 16 - 18 and 20 are allowable and that none of the claims are anticipated by Shulman, or any other art or record.”

Examiner’s Response

Examiner disagrees.

Correspondence Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Todd Ingberg whose telephone number is (571) 272-3723. The examiner can normally be reached on during the work week..

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Todd Ingberg
Primary Examiner
Art Unit 2124

TI